

What is claimed is:

1. A method for preparing a graphite nanofiber, which comprises a raw gases are supplied on the surface of a substrate provided thereon with a catalyst layer for the growth of graphite nanofibers according to the CVD technique, wherein the method is characterized by forming a catalyst layer having a desired thickness and then forming, on the catalyst layer of the substrate, a graphite nanofiber whose overall thickness is controlled and which comprises a graphite nanofiber layer and a non-fibrous layer.

2. The method for preparing a graphite nanofiber as set forth in claim 1, wherein the catalyst present in the catalyst layer for the growth of a graphite nanofiber deposited on a substrate is Fe, Co or an alloy containing at least one of these metals.

3. The method for preparing a graphite nanofiber as set forth in claim 1 or 2, wherein the raw gas is a mixed gas comprising acetylene, carbon monoxide or carbon dioxide as a carbon-supply gas and hydrogen gas.

4. The method for preparing a graphite nanofiber as set forth in claim 3, wherein the ratio of the carbon-supply gas in the mixed raw gas ranges from 10 to 80% by volume.

5. The method for preparing a graphite nanofiber as set forth in any one of claims 1 to 4, wherein the graphite nanofiber is prepared at a temperature ranging from 350 to 650°C.

6. The method for preparing a graphite nanofiber as set forth in any one of claims 1 to 5, wherein the preparation of the graphite nanofiber is carried out for 1 to 60 minutes.

7. The method for preparing a graphite nanofiber as set forth in any one of claims 1 to 6, wherein the method is carried out by forming lines consisting of the foregoing catalyst metal on the catalyst layer on a substrate on which any graphite nanofiber cannot be formed and then selectively forming graphite nanofibers only on the metal lines thus formed according to the CVD method.

8. The method for preparing a graphite nanofiber as set forth in any one of claims

1 to 7, wherein the substrate is a glass substrate or an Si wafer.

9. An emitter, which comprises a carbon film provided on the surface of an electrode substrate or a patterned portion on the surface of a patterned electrode substrate, wherein the carbon film is one comprising the graphite nanofiber prepared according to the method as set forth in any one of claims 1 to 8.

10. A field emission display element, which comprises a cathode or an emitter prepared by providing graphite nanofibers formed according to the method as set forth in any one of claims 1 to 8 on the superficial patterned portions of a patterned electrode substrate, and a anode, which comprises a phosphor and a transparent conductive film patterned into a desired shape and which is opposed to the graphite nanofibers and positioned at a desired distance from the nanofibers, wherein it is designed in such a manner that when applying an electric voltage between a selected specific graphite nanofiber and the transparent conductive film electrons are emitted from the specific graphite nanofiber to thus flash only a specific portion on the phosphor.